SYSRPC - Service Directory Maintenance

Only applicable to Natural RPC Version 5.1.

The Service Directory Maintenance function is used to maintain a service directory in order to connect the client's calling program to a subprogram on a server. The service information is stored in the subprogram NATCLTGS.

> **Attention:**
> NATCLTGS is stored in the library SYSRPC. We strongly recommend that you move the generated subprogram NATCLTGS to the application library (or one of its STEPLIBs) used by the server.

For further information on how to apply the Service Directory Maintenance function, refer to Specifying RPC Server Addresses as described in Operating a Natural RPC Environment in the Natural RPC documentation.

This section covers the following topics:

- Service Directory Concept
- Invoking Service Directory Maintenance
- Fields
- Commands and PF Keys
- Defining Logical Node Names and Services

Service Directory Concept

The Service Directory Maintenance has a hierarchical structure with a cascading list to assign subordinate to superior fields. The highest hierarchical level is node and the lowest program. You cannot enter node, server, library and program in the same line. If you do so, a corresponding error message occurs. You need to enter the value of a subordinate field in the lines below the superior field. You can assign several servers to a node, several libraries to a server and several programs to a library.

The Service Directory Maintenance screen provides a maximum of 500 lines for input.

In Example l below, two servers are defined for one node. Both servers are connected to the same node: ETB045. The remote CALLNAT to Subprogram SUB1 is executed on Server NRPC001, whereas Subprograms SUB2 and SUB3 are executed on Server NRPC002.

The server names specified here must be identical to the server names used in the Natural parameter module of the server tasks: see the parameter SRVNAME in NTRPC Macro in the Natural Parameter Reference documentation. Analogously, the node name in the service directory must be identical to the node name specified for the server tasks: see the parameter SRVNODE in NTRPC Macro in the Natural Parameter Reference documentation.

Location Transparency

The location transparency is a concept where physical node names can be replaced by logical names or a combination of physical node and server names can be replaced by logical services.

Logical node names and logical services are defined with EntireX and are assigned to physical node and server names at Natural runtime.

In Example 1 below, *LOCTRAN in the field Node indicates that field Server contains the logical service NRPC001-LOGICAL. LOGBROKER=NODE in the field Node indicates the logical node name.

Related Topics:

- Defining Logical Node Names and Services below.
- Using Location Transparency in Operating a Natural RPC Environment in the Natural RPC documentation.
- The relevant sections in the EntireX documentation.

Invoking Service Directory Maintenance

Attention:
The Service Directory Maintenance function invokes the Natural editor. As a result, data stored in the source work area may be lost when invoking Service Directory Maintenance. A corresponding message will warn you not to delete any existing entries unintentionally: choose PF12 to cancel the function or choose ENTER to confirm the action and clear the source work area.

To invoke the Service Directory Maintenance function

1. In the Code field of the Client Maintenance screen, enter **SM**.
   A window appears saying "Existing service definitions found"
   (does not appear if the Service Directory is empty).
2. In the Code field, enter **A** (default) to append a new definition,
   Or enter **I** to ignore existing services (all existing service definitions will be deleted).

   The default view of the Service Directory is displayed as shown in Example 1 below.

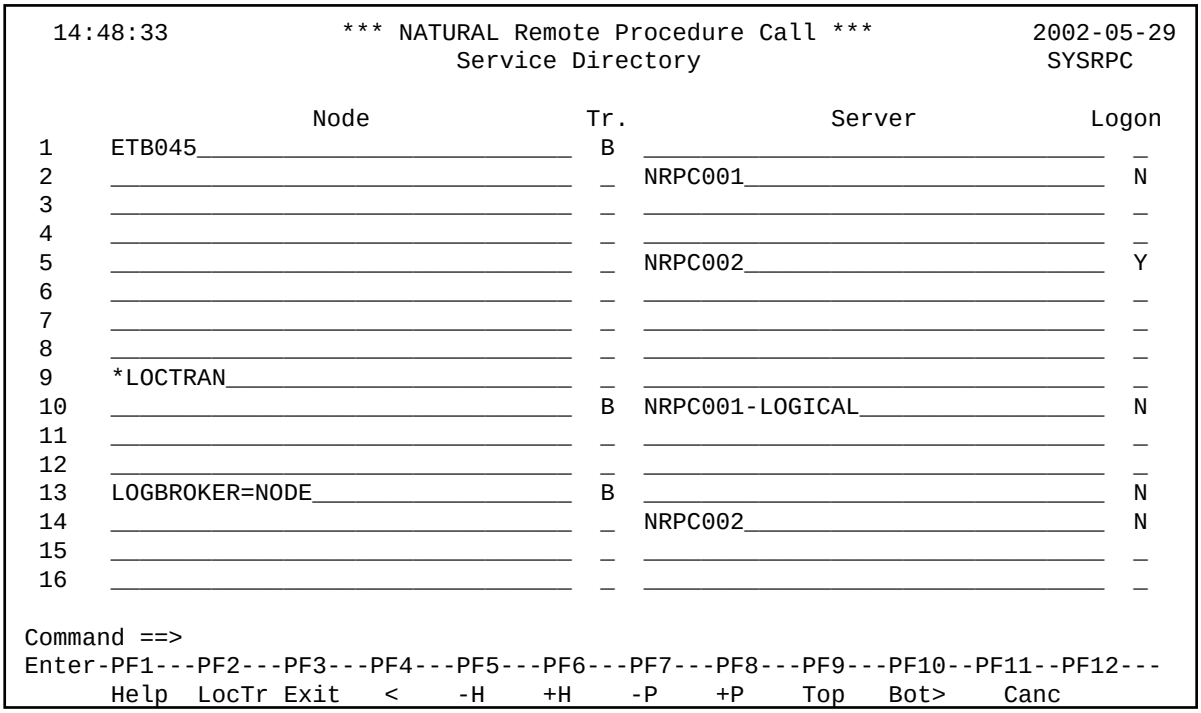
Example 1 - Default View of Service Directory

```
15:32:25            *** NATURAL Remote Procedure Call ***            2002-05-24
                              Service Directory                        SYSRPC

            Node          Tr.        Server       Logon  Library     Program
1       ETB045___________   B    __________________   _   _________   _________
2       __________________  _    NRPC001__________   N    _________   _________
3       __________________  _    __________________   _    SYSTEM__   _________
4       __________________  _    __________________   _    _________   SUB1____
5       __________________  _    NRPC002__________   Y    _________   _________
6       __________________  _    __________________   _    SYSTEM__   _________
7       __________________  _    __________________   _    _________   SUB2____
8       __________________  _    __________________   _    _________   SUB3____
9       *LOCTRAN_________  _    __________________   _    _________   _________
10      __________________  B    NRPC001-LOGICAL_   N    _________   _________
11      __________________  _    __________________   _    SYSTEM__   _________
12      __________________  _    __________________   _    _________   SUB1____
13      LOGBROKER=NODE      B    __________________   N    _________   _________
14      __________________  _    NRPC002__________   N    _________   _________
15      __________________  _    __________________   _    SYSTEM__   _________
16      __________________  _    __________________   _    _________   SUB2____

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  LocTr Exit   <    -H    +H    -P    +P    Top   Bot>    Canc
```

Example 2 - Extended Node/Server View of Service Directory



Fields

The Service Directory screen contains the following input fields (one entry per line):

Field	Description
Node	The name of the node to which the remote CALLNAT is sent. See also Definition of Terms in the Natural RPC documentation. Maximum input: Default view of the Service Directory: 16 characters, Extended node/server view of the Service Directory: 32 characters, Using the window Location Transparency (see PF2 below): 192 characters.
Server	The name of the server on which the CALLNAT is to be executed. See also Definition of Terms in the Natural RPC documentation. Maximum input: Default view of the Service Directory: 16 characters, Extended node/server view of the Service Directory: 32 characters, Using the window Location Transparency (see PF2 below): 192 characters.
Library	The name of the library on which your client application is running. SYSTEM is also allowed.
Program	The name of the remote subprogram to be accessed from the client.
Logon	Initiates a Natural logon to the server. This is possible on server or node level and applies to all definitions made on a hierarchically lower level. For example, if the LOGON option has been set for a certain server, it applies to all associated library and subprogram definitions. Possible values are: Y If set to Y (Yes), the client initiates a Natural logon to the server with the library name of the current library on the client, regardless of the library specified in the Service Directory. N blank If set to N (No) or, if no value is entered, no logon is initiated. After the remote CALLNAT has been executed (successfully or not), the server library is reset to its previous state. For more information, see Using the Logon Feature in the Natural RPC documentation. See also Server Command Execution.
Tr.	Transport method. Possible values are: B EntireX Broker ACI protocol. Default Value. C Only applies to OpenVMS: Entire Net-work CSCI protocol.

Commands and PF Keys

Below is information on:

- Line Commands
- Direct Commands and PF Keys

Line Commands

The line commands available to edit the Service Directory screen are listed below.

Enter a line command at the beginning of a line, that is, overwrite the sequential number and choose ENTER.

See also To copy or move a block of lines below and the direct command RESET.

Line Command	Function
A	Copies/moves the block of line marked with CC or MM (see below) below the line in which the command was entered.
CC	Delimits a block of lines to be copied.
D	Deletes the line marked.
DD	Delimits and deletes a block of lines. Delimit a block of lines by entering the command in the first and the last line of the block and choose ENTER to execute the command.
I	Inserts five empty lines below the line in which the command was entered.
MM	Delimits a block of lines to be moved.
P	Copies/moves the block of lines marked with CC or MM above the line in which the command was entered.

To copy or move a block of lines

1. At the beginning of the line where the block starts,
   enter CC or MM.
2. At the beginning of the line where the block ends,
   enter CC or MM.
3. Choose ENTER.
   The line commands disappear, the sequence numbers are displayed again and the block has been marked.
4. Go to the beginning of the line where you want to place the block and
   enter A (after) to copy or move the block **below** this line.
   Or enter P (prior) to copy or move the block **above** this line.
   Note that you can only execute A or P on lines with at least one field filled.
5. Choose ENTER.

Direct Commands and PF Keys

The following direct commands and PF keys are available in the Service Directory screen:

Direct Command	PF Key	Function
EXPIRATION		The remote directory data are loaded at runtime. The expiration time determines the period of validity of this data. If directory data are requested after the expiration time set, they will automatically be reloaded. If expiration time is set to 0 seconds, the remote directory data will not be reloaded. With the direct command EXPIRATION, enter an expiration time in seconds, for example, EXPIRATION 86400. Maximum is an 8-digit number. If you do not provide a parameter with the command, the Expiration Time window appears where you can display or modify the current time.
RESET		Resets the marks set with the line commands CC, MM and DD as described in Line Commands above. Note that you must first remove the erroneous line command(s) entered.
	PF1	Invokes the editor online help.
	PF2	Invokes the Location Transparency window where you can define a logical node name or a logical service as described in Defining Logical Node Names and Services below.
	PF3	Exit. Prompts you to save modifications and exit the Service Directory screen.
<	PF4	Displays the extended view of the fields Node and Server. The extended node/server view does not display the fields Library and Program as shown in Example 2 above. Choose PF11 to switch back to the default view.
-H	PF5	Scrolls half a page backward/forward.
+H	PF6	
-P	PF7	Scrolls one page backward/forward.
+P	PF8	
TOP	PF9	Scrolls to the beginning of the list.
BOT	PF10	Scrolls to the end of the list.
>	PF11	Switches back to the default view of the Service Directory (see Example 1) if the extended view of the fields Node and Server view was invoked earlier by choosing PF4.
CANCEL	PF12	Exits the Service Directory screen without saving any modification.

Defining Logical Node Names and Services

Logical node names or logical services can only be defined for node or server fields that already contain any values.

Note that defining a logical service, the original (physical) node name will be replaced by *LOCTRAN and it is **not** possible to automatically convert back logical node names or logical services. To remove logical names and services, see below.

To define a logical service

- Place the cursor at a Server field and choose PF2/LocTr.
  The window "Location Transparency - Logical Service" appears.
- If desired, modify the existing values.
- Choose ENTER.

The window Server Type Conversion appears and provides the following two options:

- Enter Y (Yes) to confirm the conversion.
  The value in the field Node that relates to the specified server is replaced by *LOCTRAN. This indicates that a node/server combination was converted into a logical service.
- Enter any character (except Y) or do not enter any value to cancel the function.
  The physical node and server names are retained.

To define a logical node name

- Place the cursor at a Node field and choose PF2/LocTr.
  The window "Location Transparency - Logical Node Name" appears with the preset value of LOGBROKER=*name*
  where *name* denotes the logical Broker name.
  If desired, modify *name* (but do not modify LOGBROKER=).
- Execute or cancel the function:
  - Choose ENTER to confirm the conversion.
    The physical node name was converted into a logical name.
  - Choose PF12 to cancel the function.
    The physical node name is retained.

To remove a logical node name or logical service

- For a logical node name: in the Node field, remove the string LOGBROKER=.

  For a logical service: delete the logical service and insert a physical server(s) by using the line commands **D** and **I** as described in the relevant section above.

